

§ 98.364 Monitoring and QA/QC requirements.

(a) Perform an annual animal inventory or review of facility records (for static populations) or population calculation (for growing populations) to determine the average annual animal population for each animal type (see description in § 98.363(a)(1) and (2)).

(b) Perform an analysis on your operation to determine the fraction of total manure by weight for each animal type that is managed in each on-site manure management system component. If your system changes from previous reporting periods, you must reevaluate the fraction of total manure managed in each system component.

(c) The CH₄ concentration of gas from digesters must be determined using ASTM D1946-90 (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference *see* § 98.7). All gas composition monitors shall be calibrated prior to the first reporting year for biogas methane and carbon dioxide content using ASTM D1946-90 (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference *see* § 98.7) and recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent, or whenever the error in the midrange calibration check exceeds ± 10 percent. All monitors shall be maintained as specified by the manufacturer.

(d) All temperature and pressure monitors must be calibrated using the procedures and frequencies specified by the manufacturer. All equipment (temperature and pressure monitors) shall be maintained as specified by the manufacturer.

(e) For digesters with gas collection systems, install, operate, maintain, and calibrate a gas flow meter capable of measuring the volumetric flow rate to provide data for the GHG emissions calculations, using the applicable methods specified in paragraphs (e)(1) through (e)(6) of this section or as specified by the manufacturer.

(1) ASME MFC-3M-2004 Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi (incorporated by reference, *see* § 98.7).

(2) ASME MFC-4M-1986 (Reaffirmed 1997) Measurement of Gas Flow by Turbine Meters (incorporated by reference, *see* § 98.7).

(3) ASME MFC-6M-1998 Measurement of Fluid Flow in Pipes Using Vortex Flowmeters (incorporated by reference, *see* § 98.7).

(4) ASME MFC-7M-1987 (Reaffirmed 1992) Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles (incorporated by reference, *see* § 98.7).

(5) ASME MFC-14M-2003 Measurement of Fluid Flow Using Small Bore Precision Orifice Meters (incorporated by reference, *see* § 98.7).

(6) ASME MFC-18M-2001 Measurement of Fluid Flow using Variable Area Meters (incorporated by reference, *see* § 98.7).

(f) If applicable, the owner or operator shall document the procedures used to ensure the accuracy of gas flow rate, gas composition, temperature, and pressure measurements. These procedures include, but are not limited to, calibration of fuel flow meters and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.

(g) Each gas flow meter shall be calibrated prior to the first reporting year and recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent. Each gas flow meter must have a rated accuracy of ± 5 percent or lower and be capable of correcting for the temperature and pressure and, if the gas composition monitor determines CH₄ concentration on a dry basis, moisture content.

§ 98.365 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations, according to the requirements in paragraph (b) of this section.

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(b) For missing gas flow rates or CH₄ content data, the substitute data value shall be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident. If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

§ 98.366 Data reporting requirements.

(a) In addition to the information required by § 98.3(c), each annual report must contain the following information:

- (1) List of manure management system components at the facility.
- (2) Fraction of manure from each animal type that is handled in each manure management system component.
- (3) Average annual animal population (for each animal type) for static populations or the results of Equation JJ-4 for growing populations.
- (4) Average number of days that growing animals are kept at the facility (for each animal type).
- (5) The number of animals produced annually for growing populations (for each animal type).
- (6) Typical animal mass (for each animal type).
- (7) Total facility emissions (results of Equation JJ-15).
- (8) CH₄ emissions from manure management system components listed in § 98.360(b), except digesters (results of Equation JJ-2).
- (9) VS value used (for each animal type).
- (10) B₀ value used (for each animal type).
- (11) Methane conversion factor used for each MMS component.
- (12) Average ambient temperature used to select each methane conversion factor.
- (13) N₂O emissions (results of Equation JJ-13).
- (14) N value used for each animal type.

(15) N₂O emission factor selected for each MMS component.

(b) Facilities with anaerobic digesters must also report:

- (1) CH₄ emissions from anaerobic digesters (results of Equation JJ-5).
- (2) CH₄ flow to the digester combustion device for each digester (results of Equation JJ-6, or value from fully integrated monitoring system as described in 98.363(b)).
- (3) CH₄ destruction for each digester (results of Equation JJ-11).
- (4) CH₄ leakage for each digester (results of Equation JJ-12).
- (5) Total annual volumetric biogas flow for each digester (results of Equation JJ-7).
- (6) Average annual CH₄ concentration for each digester (results of Equation JJ-8).
- (7) Average annual temperature at which gas flow is measured for each digester (results of Equation JJ-9).
- (8) Average annual gas flow pressure at which gas flow is measured for each digester (results of Equation JJ-10).
- (9) Destruction efficiency used for each digester.
- (10) Number of days per year that each digester was operating.
- (11) Collection efficiency used for each digester.

§ 98.367 Records that must be retained.

In addition to the information required by § 98.3(g), you must retain the calibration records for all monitoring equipment, including the method or manufacturer's specification used for calibration.

§ 98.368 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

TABLE JJ-1 TO SUBPART JJ OF PART 98—ANIMAL POPULATION THRESHOLD LEVEL BELOW WHICH FACILITIES ARE NOT REQUIRED TO REPORT EMISSIONS UNDER SUBPART JJ ^{1,2}

Animal group	Average annual animal population (Head) ³
Beef	29,300